

REMARKS

Claim 66 is amended. Claims 63 and 64 are cancelled. Claims 25-62 and 65-69 are pending in the application. Claims 27, 34, 41, 44 and 62 are withdrawn from consideration.

Applicant notes that the response to March 26, 2002 Office Action which applicant filed on July 23, 2002 indicated addition of new claims 50-69. However, the set of added claims did not include claims numbered 63 and 64. Applicant hereby appropriately cancels claims 63 and 64 and apologizes for any confusion the misnumbering may have caused.

Claims 25-26, 28-33, 35-40, 42-43, 45-61 and 65-69 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shindo, U.S. Patent No. 5,810,983. The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. These three factors must be shown to exist to establish a *prima facie* case of obviousness, the burden of such showing belonging to the Patent Office. Claims 25-26, 28-33, 35-40, 42-43, 45-61 and 65-69 are allowable over Shindo for at least the reason that Shindo fails to disclose or suggest each and every limitation in any of those claims and does not fairly provide a basis for a reasonable expectation of success.

The Examiner indicates in the present Action that applicant's arguments presented in the previous Response with respect to independent claim 25 and dependent claims 26 and 28-30, have been considered but were not found to be persuasive. Applicant respectfully requests reconsideration of such position.

With respect to claim 25 such recites a high purity cobalt material comprising less than 50 ppm total metallic impurities and comprising chromium at a concentration of less than 0.05 ppm. Shindo discloses a high purity cobalt target having a chromium content of 1 ppm or less (abstract; col. 4, ll. 1-15 and col. 7, ll. 1-9). At page 2 of the present Action, the Examiner indicates that teaching of the range disclosed in the Shindo patent would render obvious the claimed product and that the Shindo disclosure must be considered for what it fairly teaches one of ordinary skill in the art (referencing *In re Meinhardt*, 157 U.S.P.Q. 270). The Examiner further indicates that the standard for determining what a reference is "fairly teaching" is that "a general teaching is sufficient to disclose the scope of the invention". However, applicant notes that an art reference can only be said to teach what it enables. Accordingly, Shindo can be found to fairly teach only what is enabled by the disclosure. That is, Shindo can only be held to fairly teach what such disclosure enables one skilled in the art to practice or produce without undue experimentation (see MPEP § 2164).

As indicated in applicant's previous response, the disclosure of a broad range of 1 ppm or less of Cr does not indicate or even suggest that the range of less than 0.05 ppm Cr as recited in claim 25 can be achieved. Further, Shindo does not disclose any specific examples of Cr content. As further discussed in the previous response, the claim 25 recited range of chromium content confers specific advantages relative to the prior art. As discussed in applicants specification at, for example, page 3, line 24 through page 4, line 10, metallics present in cobalt are undesirable due to their potential to migrate. Minimization of the amount of Cr in a cobalt sputtering target is specifically advantageous since Cr can cause problems with connections at semiconductor device interfaces. Shindo

merely describes a broad range of 1 ppm Cr or less without identifying any advantages to such Cr content and without specifically indicating how to obtain a lower Cr content or evidencing that a lower Cr content can be achieved. Applicant notes that the upper limit of the Cr range disclosed in Shindo is 20 times higher than that recited in claim 25. Considering the relatively broad range of Cr disclosed in Shindo and the lack of any indication of achieving a Cr content in the range recited in claim 2, there is no reasonable expectation of success in making the claim 25 recited invention based upon the Shindo disclosure.

At page 3 of the present action the Examiner indicates that because the claims are directed to a product, only the product is given patentable weight. The Examiner implies that applicant's argument set forth in the previous Response regarding Shindo's failure to disclose or suggest any method of achieving the claim 25 recited amounts of impurities is irrelevant because the invention defined in product-by-process claims is a product not a process. Applicant notes that claim 25 does not recite any process and is directed solely to a product. Accordingly, independent claim 25 is not a product-by-process claim. Applicant's argument regarding the methods disclosed in Shindo is set forth in the Response as pertaining to the issue of the scope of enablement of the Shindo disclosure. Reconsideration of such arguments is therefore requested.

The Examiner additionally states at page 3 of the present action that it would have been obvious to one having ordinary skill in the art to obtain the recited chromium content "because the ordinary artisan by routine experimentation would obtain the claimed values". Applicant respectfully asserts that this statement is conclusory and finds no reasonable basis within the cited art reference. The Shindo disclosure describes specific methods for

achieving the indicated chromium range of less than 1 ppm. Shindo does not specify how to obtain a chromium content of less than 0.05 Cr as recited in claim 25 and does not otherwise provide any evidence that a material was actually obtained with a chromium content of less than 1 ppm. Accordingly, it is clear from the Shindo disclosure, expressing a chromium content of 1 ppm or less, that such reference does not place a high purity cobalt material containing less than 0.05 ppm Cr within the reach of those of ordinary skill.

For the reasons set forth above, Shindo does not provide a basis for a reasonable expectation of success and does not teach or suggest all the limitations of independent claim 25. Accordingly, a *prima facie* case of obviousness has not been established.

Dependent claims 26 and 28-30 are allowable over Shindo for at least the reason that they depend from allowable base claim 25.

Independent claims 31 and 42 recite cobalt materials comprising cobalt and comprising Mn at a concentration of less than 0.12 ppm. Independent claims 38 and 55 recite cobalt materials comprising cobalt and Ti at a concentration of less than 1 ppm. As set forth in applicant's previous response, Shindo does not disclose or suggest a cobalt material comprising Mn or comprising Ti as recited in any of independent claims 31, 38, 42 or 55. Accordingly, independent claims 31, 38, 42 and 55 are not rendered obvious by Shindo and are allowable over this reference. Corresponding dependent claims 32-33, 35-37, 39-40, 43, 45-54 and 56-57 are allowable over Shindo for at least the reason that they depend from allowable base claims.

Applicant notes that the arguments set forth in the previous Response and reiterated above with respect to dependent claims 31, 38, 42, 55 and the corresponding dependent claims, were not addressed by the Examiner in the present Action. Directing

attention to MPEP § 706.07, a final rejection must “be clearly developed to such an extent that applicant may readily judge the advisability of an appeal” and “should include a rebuttal of any arguments raised in applicant’s reply”. Because the present Action fails to address arguments raised in applicant’s previous response, the finality of the present action is improper. Accordingly, applicant respectfully requests withdrawal of the finality of the present Action.

Independent claim 58 recites a sputtering target comprising at least 99.99% cobalt and less than 5 ppm of C. Shindo does not disclose or suggest the claim 58 recited cobalt sputtering target comprising less than 5 ppm of C. Accordingly, independent claim 58 is not rendered obvious by Shindo and is allowable over this reference.

Dependent claims 59-61 and 65 are allowable over Shindo for at least the reason that they depend from allowable base claim 58.

As amended, independent claim 66 recites a high purity cobalt material comprising zinc at a concentration of less than 0.2 ppm, and less than 25 ppm total metallic impurities. The amendment to claim 66 is supported by the specification at, for example, table 1. Shindo does not disclose or suggest the claim 66 recited high purity cobalt material comprising zinc. Accordingly, independent claim 66 is not rendered obvious by Shindo and is allowable over this reference.

Dependent claims 67-69 are allowable over Shindo for at least the reason that they depend from allowable base claim 66.

For the reasons discussed above claims 25-26, 28-33, 35-40, 42-43, 45-61 and 65-69 are allowable. Accordingly, applicant respectfully requests formal allowance of such pending claims in the Examiner’s next action.

Respectfully submitted,

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